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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,759	04/05/2001	Kevin Gary Tapperson	AUS920010055US1	8845

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EXAMINER

BANANKHAH, MAJID A

ART UNIT	PAPER NUMBER
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2127

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/826,759	TAPPERSON, KEVIN GARY	
	<b>Examiner</b>	<b>Art Unit</b>	
	Majid A Banankhah	2127	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 April 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. This office action is in response to application filed on April 05, 2001. Claims 1-20 are considered for examination.

#### *Claim Rejections - 35 USC § 103*

2. Following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JAVA threads (by Scott Oaks & Henry Wong, Copyright 1999, by Oreilly & Associates, Inc., hereinafter Oaks & Wong).

Per claims 1, 9, and 17, the reference of Oaks & Wong, teaches:  
A method for preventing premature shutdown of a virtual machine (pg. 164, Daemon Threads, to pg. 167, in particular, pg. 167, lines 1-2) comprising the steps of:

monitoring daemon threads running in the virtual machine by the waiter thread (page 167, first paragraph, Daemon thread acquire the lock and release the Daemon lock, once critical section is complete, See also page 199, Definition of Monitor and lock, therefore); and

preventing shutdown of the virtual machine so long as any of the monitored daemon threads are running in the virtual machine (we protect Daemon thread by ensuring that a user thread exists, As long as there is user thread, the virtual machine will not exist, which will allow the daemon threads to finish the critical section of the code the system of Oaks & Wong, page 167, lines 1-7).

The reference of Oaks & Wong fails to explicitly teach of "starting a waiter thread in the virtual machine". However, daemon thread, which acquires the daemon lock, must have assurance from a user thread, in order for the virtual machine not to exit before daemon thread finishes its job. Therefore, it would have been obvious for one ordinary skill in the art at the time the invention was made to start a user thread in order to ensure the daemon thread has finished its job, for the reason to make sure all daemon threads has finished their jobs. Also Oaks & Wong suggested this on page 166, lines 5-20.

Art Unit: 2127

Per claims 2, 10 and 18 the method as recited in claim 1, further comprising the steps of:  
registering daemon threads in a queue managed by the waiter thread. The reference of Oaks & Wong, page 213, teaches of queue busy flag, when lock is used to protect daemon thread, and in the art of computer science, elements inserted in the queue are registered first.

Per claims 3, 11, and 19 the method as recited in claim 2, further comprising the step of:  
responsive to a first daemon thread becoming inactive, searching for other inactive daemon threads registered in the queue, it is well known in the art that queues are data structure from which elements can be removed only in the same order they are were inserted. Therefore, when the first daemon thread is inactive, the other daemon threads are first in line (Oaks & Wong, page 213, last line to page 214).

Per claims 4 and 12, the method as recited in claim 2, further comprising the step of:  
responsive to a new daemon thread being created, appending the new daemon thread to the end of the queue. It is well known in the art that queues are data structure from which elements can be removed only in the same order they are were inserted. The queue in Oaks & Wong accepts data sequentially.

Per claims 5, 13 an 20 the method as recited in claim 2, further comprising the steps of  
determining whether the queue is empty; and if the queue is empty, waiting for the virtual machine to shut down or for a new daemon thread to be created (see Oaks & Wong, page 167, lines 1-7).

Per claims 6 and 14, the method as recited in claim 5, further comprising the step of:  
if a new daemon thread is created, adding the new daemon thread to the queue. When a daemon thread is created, as part of the scheduling scheme, it is added to the queue, so that when there is no user thread the system can find other threads before exiting, therefore it must be added to a data structure such as a queue (Oaks & Wong, page 165, lines 7-15).

Per claims 7 and 15, the method as recited in claim 1, wherein the waiter thread is a normal thread. The user threads in Oaks & Wong are normal thread and waiter thread is a matter of naming convention and does not constitute a patentable distinction. See page 167, a user thread that exist until daemon threads are finishing their job are preventing virtual machine from exiting and therefore, they are waiter thread.

Per claims 8 and 16, the method as recited in claim 1, wherein the daemon threads are created by remote method invocation code. Java Soft's Java/Remote Method Invocation (Java/RMI), is a standardize methods by which objects can be distributed and accessed over a network. These are Microsoft Corporation's Distributed Component Object Model (DCOM), Object Request Brokers (ORBs) that use CORBA, DCOM, or Java Remote Method Invocation (RMI)--ORBs that use one of these standards implement this pattern. They define an Interface Definition Language (IDL) that is the format or contract of the stream and use stream-based communication

Art Unit: 2127

as the communication medium, and is therefore, well known in the art and does not constitute a patentable distinction.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Majid A. Banankhah** whose voice telephone number is **(703) 308-6903**. A voice mail service is also available at this number.

All response sent to U.S. Mail should be mailed to:

**Commissioner of Patent and Trademarks**

**Washington, D.C. 20231**

**Hand-delivered responses should be brought to Crystal Park Two, 2021 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).** All hand-delivered responses will be handled and entered by the docketing personnel. Please do not hand deliver responses to the Examiner.


**All Formal or Official Faxes must be signed and sent to either (703) 308-9051 or (703) 308-9052.** Official faxes will be handled and entered by the docketing personnel. The date of entry will correspond to the actual FAX reception date unless that date is a Saturday, Sunday, or a Federal Holiday within the District of Columbia, in which case the official date of receipt will be the next business day. The application file will be promptly forwarded to the Examiner unless the application file must be sent to another area of the office, e.g., Finance Division for fee charging, etc.

Art Unit: 2127

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

Maid Banankhah

5/26/04

  
MAJID A. BANANKHAH  
PRIMARY EXAMINER